

## Math Masterminds

**Dates:** January 15- March 12, 2014 (8 weeks)

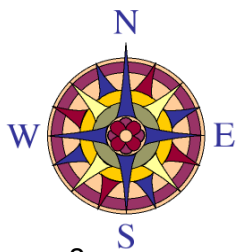
**Instructor:** Sarah Hogue

**Objective:** Each week students will tackle math puzzles, challenges, and learn new "tricks" and techniques to solving a variety of math questions, all while learning about the masterminds behind founding principles of modern mathematics. Each week students will overview the life and times of a great mathematician and then explore key concepts, principles, and formulas introduced by the featured master. Students' problem solving skills will be honed as they examine the historical, cultural, and personal context for discoveries in mathematics. Students will learn "when" and "why" these real people made contributions to modern math and "what" lead them to their discoveries. The class will work sample problems and use experiments and manipulatives to demonstrate the formulas, theories, short-cuts, or alternate approaches suggested by famous mathematicians. Students will be exposed to a wide variety of math terms and concepts.

Mathematicians explored in Quarter 3 include: Thales, Hypatia, Banneker, Euclid, and Lovelace. This class is not a repeat of Math Masterminds classes from 1st and 2nd quarter and may be taken without prerequisites.

### Preliminary Course Outline

<u>Week</u>	<u>Theme/Topic</u>
1.	Thales <ul style="list-style-type: none"><li>• History of Thales</li><li>• Smart Shadows</li><li>• Other Proportion Problems</li><li>• Homework – Stars Around the Moon</li></ul>
2.	Thales <ul style="list-style-type: none"><li>• Deductive Reasoning – Who's Who on the Baseball Team</li><li>• Extra Activity – The Nine Digit Puzzle</li></ul>



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3. Hypatia
  - History of Hypatia
  - The Amazing Ellipse
  - A Stamp Stumper
4. Benjamin Banneker
  - History of Banneker
  - A Clockmaker's Challenge
  - Make-A-Square Puzzle
  - Different Puzzles from Banneker's Collection
  - Homework – More Puzzles
5. Euclid
  - (Discuss Puzzles)
  - History of Euclid
  - Euclid's Algorithm
  - GCD Meets LCM
6. Euclid
  - Perfect Numbers
  - Daffy Definitions Versus Real Definitions
  - White-Faced Cubes
7. Ada Lovelace
  - History of Lovelace
  - Calculator Fun
  - Circle Circus
8. Ada Lovelace
  - Leap Frog
  - Extra Activity – The Magic Card Game

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